Amendments to the Specification

Please replace the title beginning at page 1, line 1, with the following rewritten title:

GENERATING PATH-CENTRIC TRAFFIC INFORMATION FOR ANALYSIS USING AN ASSOCIATION OF ~~ASSOCIATING~~ **PACKET-CENTRIC INFORMATION** ~~SAMPLES WITH~~ **TO PATH-CENTRIC INFORMATION** ~~FOR AGGREGATION~~

Please replace the Abstract beginning at page 27, line 3, with the following rewritten Abstract:

Samples from an addressed data forwarding devices, such as a router, are associated with path-centric information. Information from the samples ~~and/or the~~ is used to update corresponding path-centric traffic information ~~is used to aggregated traffic information~~, such as flow information for example. The aggregated path-centric traffic information can then be used~~, for use~~ by traffic analysis operations.

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The following is a listing of claims in the application:

1 Claim 1 (original): A method for generating traffic
2 information for analysis, the method comprising:
3   a) accepting at least one sample derived from
4   addressed data;
5   b) determining path-centric information based on the
6   accepted at least one sample; and

7   c) adjusting a traffic metric of a traffic parameter
8   based on the determined path-centric information.

1 Claim 2 (original): The method of claim 1 wherein the
2 addressed data is a packet.

1 Claim 3 (original): The method of claim 1 wherein the
2 sample includes information from the header of a packet.

1 Claim 4 (original): The method of claim 1 wherein the act
2 of determining path-centric information based on the
3 accepted at least one sample includes using at least a part
4 of the at least one sample as a search key to find an item
5 with a closest matching key in a data structure.

1 Claim 5 (original): The method of claim 4 wherein the data
2 structure is a searchable data structure selected from a
3 group consisting of (A) a hash table, (B) a binary search
4 tree, and (C) a trie.

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Claim 6 (original): The method of claim 1 wherein the act of determining path-centric information based on the accepted at least one sample includes:

       i) using at least a part of the at least one sample as a search key to find a first item with a closest matching key in a first data structure; and

       ii) using at least a part of the first item found as a search key to find a second item with a matching key in a second data structure.

Claim 7 (original): The method of claim 6 wherein the second item includes path-centric information.

Claim 8 (original): The method of claim 6 wherein the second item includes an origin autonomous system and a peer autonomous system.

Claim 9 (original): The method of claim 6 wherein the second item includes an autonomous system path.

Claim 10 (original): The method of claim 6 wherein the first and second data structures are tries.

Claim 11 (original): The method of claim 6 wherein the first data structure is a Radix trie.

Claim 12 (original): The method of claim 6 wherein the at least a part of the at least one sample used as a search key is an internet protocol prefix.

1 Claim 13 (original): The method of claim 6 wherein the at
2 least a part of the at least one sample used as a search
3 key is at least one of (A) a source address and (B) a
4 destination address.

1 Claim 14 (original): The method of claim 6 wherein the at
2 least a part of the first item found used as a search key
3 is an autonomous system index.

1 Claim 15 (original): The method of claim 1 wherein the
2 sample includes at least two parameters selected from a
3 group parameters consisting of (A) a source address, (B) a
4 destination address, (C) a protocol, (D) a source port, (E)
5 a destination port, (F) an interface number, (G) a type of
6 service, (H) an SNMP index, (I) a kernel logical interface
7 index, and (J) a type of interface indice.

1 Claim 16 (original): The method of claim 1 wherein the
2 path-centric information determined includes an origin
3 autonomous system and a peer autonomous system.

1 Claim 17 (original): The method of claim 1 wherein the
2 path-centric information determined includes an autonomous
3 system path.

1 Claim 18 (original): The method of claim 1 wherein the act
2 of adjusting a traffic metric of a traffic parameter based
3 on the determined path-centric information includes:
4   i) using a part of the determined path-centric
5   information as a key to search items of traffic
6   parameters;

7   ii)   if a traffic parameter with a matching key

8   is found, incrementing its traffic metric;

9   iii)   if none of the traffic parameters has a

10   matching key, creating a new item.

1   Claim 19 (original):   The method of claim 1 wherein the

2   traffic metric adjusted is at least one of (A) a byte count

3   and (B) a packet count.

1   Claim 20 (original):   The method of claim 1 wherein the

2   traffic parameter is selected from a group of traffic

3   parameters consisting of (A) a particular pair of source

4   and destination addresses, (B) a particular pair of source

5   and destination ports, and (C) a particular pair of

6   autonomous systems.

1   Claim 21 (previously presented):   A method for generating

2   data structures for mapping information in a sample derived

3   from addressed data, to path-centric information, the

4   method comprising:

5   a)   using network information, building a first data

6   structure including items of a first type, each of the

7   items of the first type including an autonomous system

8   index and an internet protocol prefix, wherein the

9   internet protocol prefix is a key; and

10   b)   using network information, building a second data

11   structure including items of a second type, each of

12   the items of the second type including an autonomous

13   system index and an autonomous system path, wherein

14   the autonomous system index is a key,

15   wherein the first and second data structures

16   may be used for generating traffic information for

17   analysis.

1   Claim 22 (original): The method of claim 21 wherein the

2   first and second data structures are tries.

1   Claim 23 (original): The method of claim 21 wherein the

2   first data structure is a Radix trie.

1   Claim 24 (original): The method of claim 21 wherein the

2   network information was derived from routing information.

1   Claim 25 (original): An apparatus for generating traffic

2   information for analysis, the apparatus comprising:

3   a) an input for accepting at least one sample derived

4   from addressed data;

5   b) means for determining path-centric information

6   based on the accepted at least one sample; and

7   c) means for adjusting a traffic metric of a traffic

8   parameter based on the determined path-centric

9   information.

1   Claim 26 (original): The apparatus of claim 25 wherein the

2   means for determining path-centric information based on the

3   accepted at least one sample include a searching facility,

4   the search facility (i) using at least a part of the at

5   least one sample as a search key to find a first item with

6   a closest matching key in a first data structure, and (ii)

7   using at least a part of the first item found as a search

8   key to find a second item with a matching key in a second

9   data structure.

1 Claim 27 (original): The apparatus of claim 26 wherein the

2 second item includes path-centric information.

1 Claim 28 (original): The apparatus of claim 26 wherein the

2 second item includes an origin autonomous system and a peer

3 autonomous system.

1 Claim 29 (original): The apparatus of claim 26 wherein the

2 second item includes an autonomous system path.

1 Claim 30 (original): The apparatus of claim 25 wherein the

2 means for adjusting a traffic metric of a traffic parameter

3 based on the determined path-centric information include

4   i) a search facility, using a part of the

5   determined path-centric information as a key to

6   search items of traffic parameters; and

7   ii) an aggregator, wherein if a traffic

8   parameter with a matching key is found, the

9   aggregator increments the traffic metric of the

10   traffic parameter, and wherein if none of the

11   traffic parameters has a matching key, the

12   aggregator creates a new item.

1 Claim 31 (original): The apparatus of claim 25 wherein the

2 traffic parameter is selected from a group of traffic

3 parameters consisting of (A) a particular pair of source

4 and destination addresses, (B) a particular pair of source

5 and destination ports, and (C) a particular pair of

6 autonomous systems.

1 Claim 32 (original): A data forwarding device comprising:

2   a)   an addressed data forwarding facility for

3   forwarding addressed data based on forwarding

4   information;

5   b)   a routing facility for determining and

6   disseminating network state information, and for

7   generating path information based on the network state

8   information;

9   c)   a sampler for generating samples based on accepted

10   addressed data;

11   d)   means for determining path-centric information

12   based on the samples generated by the sampler; and

13   e)   means for adjusting a traffic metric of a traffic

14   parameter based on the determined path-centric

15   information.

1   Claim 33 (original): The data forwarding device of claim

2   32 wherein the routing facility effects a exterior gateway

3   protocol.

1   Claim 34 (original): The data forwarding device of claim

2   32 wherein the routing facility effects a border gateway

3   protocol.

1   Claim 35 (previously presented): A data forwarding device

2   comprising:

3   a)   an addressed data forwarding facility for

4   forwarding addressed data based on forwarding

5   information;

6   b)   a routing facility for determining and

7   disseminating network state information, and for

8   generating path information based on the network state

9   information;

10   c)   means, using the path information generated by the

11   routing facility, for building a first data structure

12   including items of a first type, each of the items of

13   the first type including an autonomous system index

14   and an internet protocol prefix, wherein the internet

15   protocol prefix is a key; and

16   d)   means, using the path information generated by the

17   routing facility, for building a second data structure

18   including items of a second type, each of the items of

19   the second type including an autonomous system index

20   and an autonomous system path, wherein the autonomous

21   system index is a key,

22   wherein the first and second data structures may

23   be used for generating traffic information for analysis.

1   Claim 36 (original):   The data forwarding device of claim

2   35 further comprising:

3   e)   a sampler for generating samples based on accepted

4   addressed data;

5   f)   means for determining path-centric information

6   based on (i) the samples generated by the sampler,

7   (ii) the first data structure, and (iii) the second

8   data structure; and

9   g)   means for adjusting a traffic metric of a traffic

10   parameter based on the determined path-centric

11   information.

1   Claim 37 (previously presented):   A machine-readable medium

2   having stored thereon:

3   a)   a first data structure including items of a first

4   type, each of the items of the first type including an

5   autonomous system index and an internet protocol

10

6   prefix, wherein the internet protocol prefix is a key;

7   and

8   b)   a second data structure including items of a

9   second type, each of the items of the second type

10   including an autonomous system index and an autonomous

11   system path, wherein the autonomous system index is a

12   key,

13   wherein the first and second data structures may

14 be used for generating traffic information for analysis.

1 Claim 38 (original): The machine-readable medium of claim

2 37 wherein the first and second data structures are tries.

1 Claim 39 (original): The machine-readable medium of claim

2 37 wherein the first data structure is a Radix trie.

1 Claim 40 (original): The machine-readable medium of claim

2 37 further comprising:

3   c)   network information derived from routing

4   information.